c) determining a second set of achievable statuses for the technical system having an error;

C1 and

d) forming a difference set from the first set and the second set; and

e) determining result conditions from the difference set, the result conditions meeting prescribable conditions.

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2. (AS TWICE AMENDED) The method according to claim 1, wherein method steps a) through e) are implemented for all possible errors of sensors and/or actuators in the technical system.

C2

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8. (AS TWICE AMENDED) A method for rapid prototyping of a technical system, the system having at least one of sensors and actuators in a technical system, the prototyping being in a form of a status-finite description that exhibits statuses of the technical system, the method using a computer, comprising:

C3

determining a status-finite description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system;

determining a first set of achievable statuses for the technical system without errors;

determining a second set of achievable statuses for the technical system having an error;

forming a difference set from the first set and the second set; and

determining result conditions from the difference set, the result conditions effecting prototyping of the technical system.

9. (AS TWICE AMENDED) The method error diagnosis of a technical system, the system having at least one of sensors and actuators in a technical system, the error diagnosis being in a form of a status-finite description that exhibits statuses of the technical system, the method using a computer, comprising:

determining a status-finite description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system;

determining a first set of achievable statuses for the technical system without errors;

determining a second set of achievable statuses for the technical system having an error;

forming a difference set from the first set and the second set; and

determining result conditions from the difference set, the result conditions effecting error diagnosis of the technical system.

10. (AS TWICE AMENDED) A method for generating critical test cases for a commissioning and a system test of a technical system, the system having at least one of sensors and actuators in a technical system, the generating being in a form of a status-finite description that exhibits statuses of the technical system, the method using a computer, comprising:

determining a status-finite description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system;

determining a first set of achievable statuses for the technical system without errors;

determining a second set of achievable statuses for the technical system having an error;

forming a difference set from the first set and the second set; and

determining result conditions from the difference set, the result conditions effecting the generation of critical test cases.

11. (AS TWICE AMENDED) A method for preventive maintenance of a technical system, the system having at least one of sensors and actuators in a technical system, the method being in a form of a status-finite description that exhibits statuses of the technical system, the method using a computer, comprising:

determining a status-finite description of the technical system for an error case of an error of at least one of a sensor and an actuator in the technical system;

determining a first set of achievable statuses for the technical system without errors;

determining a second set of achievable statuses for the technical system having an error;

forming a difference set from the first set and the second set; and